HOW TRAUMA CAN CHANGE THE BRAIN
The Three E’s of Trauma

- **EVENT** and circumstances that involves actual or threat of physical or psychological harm or severe life-threatening neglect

- The individual’s **EXPERIENCE** of these events determine whether it is a traumatic event.

- The long-lasting adverse **EFFECTS** of the event

- Therefore only the person themselves can determine whether something was traumatic
Trauma

- Private events - Sexual, physical abuse
  - Secrecy
  - Power Imbalance
  - Raging Hopelessness
  - Sense of Isolation
  - Sense of Irretrievable Loss
  - Emotional and physical reaction, fight or flight
Trauma

- Public events - natural disasters, car accidents, war, crime victimization
  - Can be a shared experience
  - No judgment attached
  - Sense of Helplessness
  - Forces beyond control
  - Sense of Irretrievable Loss
  - Emotional and physical reaction
Chronic/Complex Trauma

- Chronic trauma refers to the experience of multiple traumatic events. These multiple events may be varied.

- Chronic trauma represents cumulative effects. Each new event reminds the child of prior trauma and reinforces its total negative impact.

- Children who have experienced complex trauma have endured multiple interpersonal traumatic events from a very young age. Complex trauma has profound effects on nearly every aspect of a child’s development and his/her ability to function.
ACE Study

- Adverse Childhood Experience (ACE) Study
- Joint collaboration between the CDC and Kaiser Permanente, a California HMO.
- Asked question of whether, and how, childhood experiences affected adult health decades later.
- Outgrowth of observations made during an obesity program that had a high drop out rate.
- Individuals in the study were predominantly white, college educated with an equal number of males and females.
**Adverse Childhood Experience (ACE) Study**

Without intervention, adverse childhood events (ACEs) may result in long-term disease, disability, chronic social problems and early death. Importantly, intergenerational transmission that perpetuates ACEs will continue without implementation of interventions to interrupt the cycle.

**Adverse Childhood Experiences**
- Abuse of Child
  - Psychological abuse
  - Physical abuse
  - Sexual abuse
- Trauma in Child’s Household Environment
  - Substance Abuse
  - Parental separation &/or Divorce
  - Mentally ill or suicidal Household member
  - Violence to mother
  - Imprisoned household member
- Neglect of Child
  - Abandonment
  - Child’s basic physical &/or Emotional needs unmet

**Impact of Trauma & Adoption of Health Risk Behaviors**

**Neurobiologic Effects of Trauma**
- Disrupted neuro-development
- Difficulty controlling anger
- Hallucinations
- Depression
- Panic reactions
- Anxiety
- Multiple (6+) somatic problems
- Impaired memory
- Flashbacks

**Health Risk Behaviors**
- Smoking &/or Drug abuse
- Severe obesity
- Physical inactivity
- Self Injury &/or Suicide attempts
- Alcoholism
- 50+ sex partners
- Sexually transmitted disease
- Repetition of original trauma
- Eating Disorders
- Dissociation
- Perpetrate domestic violence

**Long-Term Consequences Of Unaddressed Trauma**

**Disease & Disability**
- Ischemic heart disease
- Cancer
- Chronic lung disease
- Chronic emphysema
- Asthma
- Liver disease
- Skeletal fractures
- Poor self rated health
- HIV/AIDS

**Social Problems**
- Homelessness
- Prostitution
- Delinquency, violence & criminal Behavior
- Inability to sustain employment-
- Re-victimization: rape; domestic Violence
- Inability to parent
- Inter-generational transmission Of abuse
- Long-term use of health & social services

Three Major Findings

1. Experiences are vastly more common than recognized or acknowledged,

2. The ACE Study reveals a powerful relationship between our emotional experiences as children and our physical and mental health as adults, as well as the major causes of adult mortality in the United States, and

3. Documents the conversion of traumatic emotional experiences in childhood into organic disease later in life.
Childhood Experiences Underlie Serious and Persistent Mental Health Problems

ACE Score and Rates of Antidepressant Prescriptions

ACE Score and Rates of Anticonvulsant Prescriptions

ACE Score and Rates of Antipsychotic Prescriptions
Health Risking Behaviors

Adverse Childhood Experiences and Current Smoking

Adverse Childhood Experiences and Likelihood of > 50 Sexual Partners
ACE Score and Indicators of Impaired Worker Performance

Prevalence of Impaired Performance (%)

- Absenteeism (>2 Days/month)
- Serious Financial Problems
- Serious Job Problems

ACE Score
- 0
- 1
- 2
- 3
- 4 or more
Rates of PTSD among adults who were formerly placed in foster care was found to be twice as high as rates as in US War veterans (Northwest Foster Care Alumni Study, Pecora, et al., 2005).

One out of 10 youth have been sexually abused by their 18\textsuperscript{th} birthday (Townsend & Rheingold, 2013).

A non-CPS study estimated that 1 in 4 children experience some form of child abuse or neglect in their lifetimes and 1 in 7 children have experienced abuse or neglect in the last year. (CDC website)

About 1,750 children died from abuse or neglect in 2016. (CDC website)
General Adult Population

- Around 65% of adults have experienced at least one traumatic event in their childhood.
- 25% have experienced two or more events.
- One out of 16 have experienced four or more traumatic events.
- One out of 22 have experienced six or more.

Adverse Childhood Experience Study
Brain Development

- **Brain at Birth**
  - 25% the size of the adult brain in weight and volume (less than 1lb)
  - Nearly the same number of neurons as adult brain (100 billion)
  - 50 trillion synapses (connections between neurons)

- Brain stem and lower brain well developed (reflexes), higher regions more primitive
Early Relationships

- Relationships are developed through the emotional bond between the child & primary caregiver. It is through this relationship we learn to:
  - Regulate emotions/“self soothe”
  - Develop trust in others
  - Freely explore our environment
  - Understand ourselves & others
  - Understand that we can impact the world around us
Brain Development

- Growing Older
  - Number of neurons are in place
  - Number of synaptic connections increases
  - Childhood to Adolescence
  - Unused connections are pruned
  - Used synapses are strengthened
Body Chemistry/
Preparing for the Bear

Recognition of threat stimulates stress-response pathways. Adrenaline and several endocrine hormones are released into the bloodstream.

- Effects of increased adrenaline and other endocrine hormones in combination include:
  - Increased cortisol production.
  - Increased blood sugar
  - Increased heart rate
  - Changes in blood-flow
  - Increased platelet levels.
  - Increased endorphin levels

Acute stress response takes a toll on your body over time if these biological responses do not return to normal baseline levels fairly rapidly.
Impact of Trauma

Strong and prolonged activation of the body’s stress management systems in the absence of the buffering protection of adult support, disrupts brain architecture and leads to stress management systems that respond at relatively lower thresholds, thereby increasing the risk of stress-related physical and mental illness.
Trauma impacts on nervous system

Traumatic Event!

Stuck on “High” Hyper-arousal

Hyperactivity
Hypervigilance
Mania
Anxiety & Panic
Rage

Stuck on “Low” Hypo-arousal

Depression
Disconnection
Exhaustion/Fatigue
Numbness

Normal Range Window of Tolerance

Key Concepts of TRM

(c)2007 Elaine Miller-Karas & L. Leitch
Developmental Response To Trauma

The meaning of a traumatic event in the life of a child is based on the child’s stage of cognitive and emotional development.
Early Childhood Trauma

- Traumatic events have a profound sensory impact on young children
- Lack of understanding of cause and effect/interpretation of events
- May blame parents/caregivers for not preventing frightening events
- Parent/child shared trauma impacts ability to parent
- Lack of control over events/environments
Early Childhood Trauma

- Risk due to rapid development of brains making them more vulnerable
- Less able to anticipate danger or how to keep themselves safe
- Cannot always express their feelings in words
Adolescents are more disrupted by stressors than adults

- Physiologically show an increased responsivity to stressors e.g. greater increases in blood pressure and blood flow in response to stress
- Respond with greater negative affect to stressful situations than children and adults
- Higher risk for drug abuse may be tied to elevated stress responsivity
Impact on Parents/Caregivers

- Depression
- Lack of trust, particularly of authority
- Impaired Social/Sexual Relationships
- Hypervigilence
- Inertia
- Substance abuse/self-medicating
- Mental Illness
- Emotional Dysregulation
Changing the Question

- What is wrong with you?
  - I am aggressive
  - I am depressed
  - I am an alcoholic

- What happened to you?
  - I am a survivor of trauma
So What Can We Do?

- Learn more about trauma
- Increase access to trauma specific interventions
  - Cognitive
  - Sensory/Somatic
  - Relational
- Create trauma informed organizations and communities
Resources

- http://www.nctsn.org

- www.aacap.org/clinical/ptsdsum.htm
  (American Academy of Child & Adolescent Psychiatry)

  (National Institute of Mental Health)

- www.annainstitute.org
Looking through the Lens of Trauma
What We Know

- Chronic trauma that occurs in early childhood that is interpersonal in nature can have the most serious impact.

- Trauma can change the way the brain responds.

- Trauma/toxic stress can impact ANY and ALL areas of functioning.

- Following trauma people often adopt health risk behaviors to cope, like eating disorders, smoking, substance abuse, self-harm, sexual promiscuity, and violence.

- Healing can happen through relationships and environments.
So What Can We Do?

- Learn more about trauma
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Our Brain’s Response to Threats

- **Fight**
  - Aggression verbal or physical
  - Oppositional/Resistant
- **Flight**
  - Running Away
  - Avoiding
  - Distracting behaviors
- **Freeze**
  - Dissociating
  - Feeling cold/frozen, numb, pale skin
  - Sense of stiffness, heaviness
  - Holding breath/restricted breathing
Some General Considerations

- Many of the target behaviors we want to extinguish were developed as a coping mechanism.
- Although it may seem intentional, it is based on:
  - Brain pathways
  - Perception of safety
  - Perception of authority
Directing Attention

- Individual’s brain in survival mode with attention focused on threats to safety, may have intrusive thoughts
  - Build trust
  - Predictability
  - Prompts and reminders

- Oversensitive to anything that may be threat
  - Activities/Overstimulation
  - Tone of Voice
  - Name calling
  - Physical boundaries
Diagnosis

- Most often associated with Posttraumatic Stress Disorder

- Trauma history may lead to non-PTSD type symptoms. Unaddressed trauma goes untreated, limiting recovery.

- Mood, Substance Abuse, Personality, Behavioral/Impulse Control Diagnoses but need to treat the trauma to address symptoms.

- Think of trauma as a co-occurring disorder with mental illness.
Responding to People with Trauma

- We may unintentionally trigger someone’s trauma response

- Need to re-conceptualize individuals’ responses from intentional to being a physiologically based response

- Organizations’ policies and environments may also retrigger trauma
Common Examples of System Responses

- Discharging a youth from a substance use program due to aggression

- Referring to juvenile justice because they only time the youth gets upset is when they are told no (viewing behavior as intentional)

- Separating out the trauma history from all the other diagnoses

- Relying on inpatient treatment when a child becomes dysregulated to the point of self-injury or threats to others
Changing the Question

- What is wrong with you?
  - I am aggressive
  - I am depressed
  - I am an alcoholic

- What happened to you?
  - I am a survivor of trauma
“The essence of trauma is that a person's sense of safety in the world, and of self, is seriously compromised. It is impossible to overemphasize the importance of the provision of a safe environment for the victims of trauma. This sense of safety must encompass physical, emotional, and social levels of care”.

The Sanctuary Model: Developing Generic Inpatient Programs for the treatment of Psychological Trauma, Sandra I. Bloom, M.D.
“Re-traumatization”

A situation, attitude, interaction, or environment that replicates the events or dynamics of the original trauma and triggers the overwhelming feelings and reactions associated with them.

- Can be obvious or not so obvious
- Is usually unintentional
- Is most often hurtful

Anna Institute
The Lens of Trauma

- You can’t trust people, particularly those in authority
- Relationships are temporary, people leave
- The world is not a safe place
- People hurt you
- Hopelessness that things will change
- Helplessness in having an impact
- Life is chaotic, cause and effect doesn’t really matter
Essential Elements

- Understanding of trauma and impact on the child
- Safety - physical, psychological, cultural
- Helping the child understand and manage overwhelming emotions
- Genuine Relationships - you and the child and others with the child
- Advocate for trauma specific services and a trauma informed approach
- Maintain your own physical and emotional health so you can help the child

Adapted from Resource Parent Curriculum NCTSN
Some Challenges

- You may be the target of the child’s dysregulation

- The child may have difficulty developing trust with you

- The child may re-enact their trauma and try to pull you in as the perpetrator

- They may not show appreciation

- Even if they have been harmed, the child may still be very connected to their family of origin

- Do not force the child to talk about their trauma history but if they do, just listen, support their feelings and let them know it is not their fault
Some General Issues

- Be Calm

- Need to be able to tolerate strong emotions

- Don’t try to rationalize with the child when they are dysregulated, they are not in the rational part of their brain

- Validate their feelings, let them know they are safe, just be with them
Addressing Needs of Individuals with Trauma

- Understanding triggers
  - Mostly sensory in nature
  - A reminder of the past trauma
  - Individual may not be aware

- Understanding Re-enactments
  - May engage in provocative behavior
  - Pulls the adult into the re-enactment
  - Adults require self-monitoring
  - Adult needs to handle strong emotions
Resources

MO Dept. of Mental Health Trauma Informed Care
https://dmh.mo.gov/trauma/

National Child Traumatic Stress Network
http://www.nctsnet.org

National Center for PTSD   https://www.ptsd.va.gov/

The Body Keeps the Score, Bessel Van Der Kolk

The Boy Who Was Raised as a Dog, Bruce Perry

The Whole Brain Child, Siegel and Bryson
THANK YOU
HELPING TO ADDRESS THE BEAR
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• Trauma can change the way the brain responds

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Traumatic Event!

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Hyperactivity
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Mania
Anxiety & Panic
Rage

Stuck on “Low” Hypo-arousal

Depression
Disconnection
Exhaustion/Fatigue
Numbness

Normal Range
Window of Tolerance
RESPONDING TO PEOPLE WITH TRAUMA

– We may unintentionally trigger someone’s trauma response

– Need to re-conceptualize individuals’ responses from intentional to being a physiologically based response

– Organizations’ policies and environments may also retrigger trauma
SOME TOOLS AND IDEAS

• Comfort Corners/Rooms

• Greeters

• Community Meetings
  – Core questions
    • How are you feeling today?
    • What is your goal today?
  – Not a time for problem resolution
SOME TOOLS AND IDEAS

• Power/Safety Plans –
  – For all in group
  – Education on how the brain works
  – Understanding impact of stress on brain
  – Identification of stressors/triggers
  – Identification of ways to regulate when trigger
  – Ways to prevent stress from building

• Routine check-ins
  – One on one relationships between staff and children
SOME TOOLS AND IDEAS

• Movement or breathing breaks for all individuals

• Body Awareness and Mindfulness
  – Start of the day
  – Start of an activity
  – End of an activity
  – End of day
SOME TOOLS AND IDEAS

• Routine check-ins for all students
  – One on one relationships between staff and students

• Clear expectations and predictability
  – Student input and choice
  – Positive prompts/reminders

• Health curriculum includes stress management
  – Inclusion of mental HEALTH/Well-being
SOMATOSENSORY ACTIVITIES

• Music - choose music based on need
• Yoga
• Drumming
• Massage
• Sand/water tables
• Jumping on a trampoline
• Swinging
• Walking or running
• Rocking
PROPrioceptive activities

- Sing a rhythmic song while jumping
- Bouncing on a ball
- Hanging off object
- Pogo sticks
- Alternative Walking (wheelbarrow, crab)
- Body sock
- Use of weighted vests or blankets
QUICK AND EASY

• Chewing gum
• Drinking through a straw
• Play dough or stress balls
SLEEP

• Ensure appropriate sleep hygiene
  – no electronic screen time within one hour of bedtime
  – maintain a consistent sleep environment,
  – add rocking and story time, and
  – utilize massage briefly before sleep

• Reduce use of medications for sleep
  – Sleep monitoring
  – Melatonin as first line
  – Other non-prescription medications
BREATHING

- Bubbles
- Pinwheels
- Blowing out candles
- Belly Breathing – Sesame Street Video
SOME GENERAL CONSIDERATIONS

• Ask permission before touching and follow their wishes, respect their boundaries

• Learn as much as possible about their daily routines and rituals

• Create a consistent and predictable environment

• Help the child prepare for family contact and to “debrief” after family contact
SUPPORTING THE CHILD

• Keep track of what was going on prior to a child becoming dysregulated. Help identify the child’s triggers
  – Who was present
  – What sensory stimulation was present
  – Had the child’s needs or wants be blocked (didn’t get their way)

• Explore and try different techniques to help the child calm

• Advocate for a child to receive trauma specific therapy

• If the child is receiving trauma specific therapy, help the child practice skills learned on a daily basis when they are calm
ROLE OF MEDICATION IN TREATING TRAUMA

• Plays a minimal role – education on work and time it takes to manage trauma impact

• Used TEMPORARILY to allow the brain and body to take advantage of therapeutic interventions

• Don’t treat or diagnose each symptom

• Clonidine helps in reducing physiological response

• Monotherapy v polypharmacy

• Help with sleep – Sleep studies, First choice melatonin

• Anti-psychotics are not typically indicated
  – Aggression may be due to flashbacks, lack of safety etc.
SELF-CARE FOR CAREGIVER

• Go for a walk

• Take a bath

• Read a book

• Spend time with a friend

• Choose an activity that most refreshes you personally.
Types of Stress

• These terms are complementary and yet different from one another in cause and impact.

• **Compassion Fatigue** (CF) refers to the profound emotional and physical erosion that takes place when helpers are unable to refuel and regenerate.

• **Vicarious trauma** (VT) refers to the profound shift in world view that occurs in helping professions when working with clients who have experienced trauma: helpers notice that their fundamental beliefs about the world are altered and possibly damaged by being repeatedly exposed to traumatic material.

• **Burnout** is physical and emotional exhaustion experienced when there is low job satisfaction and feelings of powerless and being overwhelmed at work. Burnout does not necessarily mean that our view of the world has been damaged, or that we have lost the ability to feel compassion for others.
What Have You Done?
RESOURCES


- SAMHSA National Center on Trauma Informed Care  https://www.samhsa.gov/nctic/about

- Centers for Disease Control, Violence Prevention/ACE Study  https://www.cdc.gov/violenceprevention/acestudy/index.html

- National Institute of Mental Health  http://www.nimh.nih.gov/healthinformation/ptsdmenu.cfm

- Dept. of Mental Health  http://dmh.mo.gov/trauma/
The Journey to Becoming a Trauma Informed Agency

Trauma Informed Organizations and Communities: What and How?
Some General Considerations

• Many of the target behaviors we want to extinguish were developed as a coping mechanism

• Although it may seem intentional, it is based on:
  • Brain pathways
  • Perception of safety
  • Perception of authority
Why Trauma Informed

- Trauma has been identified as one of the major public health issues of our times

- It can change the trajectory and understanding of mental health, physical health and most areas of functioning

- Can be addressed through the public health model using universal promotion and prevention strategies as well as interventions

- It is enmeshed with some of our biggest social issues and challenges
Changing the Question

• What is wrong with you?
  • I am aggressive
  • I am depressed
  • I am an alcoholic

• What happened to you?
  • I am a survivor of trauma
A New Understanding

Disparities

Health

Parenting Capacities

Violence

Employment

EMOTIONAL WELL BEING

Poverty
The Four R’s of Trauma Informed

- **Realizes** wide impact of trauma and understands potential pathways to recovery;

- **Recognizes** the signs and symptoms of trauma in children/youth, families and staff;

- **Responds** by fully integrating knowledge in policies, practices and environments; and

- Seeks to actively **resist re-traumatization**
MO Model: A Developmental Framework on Trauma Informed

• Developed by the State Trauma Roundtable

• Why Was It Developed
  • To develop a shared definition, language and understanding
  • Create manageable steps for organizations to become trauma informed
  • Increase effectiveness of any and all services
Moving Towards Trauma Informed

• Being trauma-informed is an ongoing organizational change process.

• A “trauma-informed approach” is not a program model to be implemented and monitored by a fidelity checklist.

• It is a profound paradigm shift in knowledge, perspective, attitudes and skills that continues to deepen and unfold over time.
“The essence of trauma is that a person's sense of safety in the world, and of self, is seriously compromised. It is impossible to overemphasize the importance of the provision of a safe environment for the victims of trauma. This sense of safety must encompass physical, emotional, and social levels of care”.

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The Model Continuum

• Trauma Awareness
  • Focus on increasing awareness and shift in attitudes/belief

• Trauma Sensitive
  • Focus on increasing knowledge, application, and skill development

• Trauma Responsive
  • Focus on implementing change and integration into the organization

• Trauma Informed
  • Focus on community leadership and mentoring
Principles of Trauma Informed Care

Safety

Trust

Empowerment

Collaboration

Choice
Organizational Readiness

• Leadership Commitment

  • Recognize the benefits
  • Recognize the impact it will have on customers and staff,
  • How it will achieve the organization’s mission and its financial health.
  • May require system-wide transformation by assessing policies, practices and environments
  • Allocate resources time and funding
  • Compatibility with style of leadership
Organizational Readiness

• Strategic Planning

• Effective Change Management Plan
  • Leads to improvements in processes and systems,
  • Is responsive to staff and customers, and;
  • Has a positive impact on culture

• Create a communication plan that engages all staff

Organizational Requirements to Become Trauma Informed
http://dmh.mo.gov/trauma/
Components

• Trauma Champions

• Trauma Team
  • Across all departments or offices
  • Vertically inclusive
  • Consumer/Customers

• Engagement with Leadership
Processes

• Training

• Policy Review

• Examination of Practices

• Exploration of Environments
Training

• Initial trauma “awareness” for all
  • May help identify trauma champions
  • Creates a “buzz”

• In-depth training for trauma team
  • Knowledge of brain science
  • Principles
  • Seeing through the lens of trauma

• Inclusion in orientation and professional development
Policy Review

- Multiple ways to manage policy review
  - As issues/priorities arise
  - Base on surveys
  - Systematic Review

- Through the lens of trauma
  - Safety
  - Trustworthiness
  - Choice
  - Collaboration
  - Empowerment
Practice

• Requires a shift in staff beliefs, attitudes and understanding

• How do staff interact with population and with each other
  • Engagement
  • Orientation to Program/Services
  • De-escalation skills

• Walk through or secret shopper approach
  • This may also identify policies for review
Policies and Practices

Intake

Assessments

Human Resources

Visitors

Staff Support and Resilience

Discharge planning
Environments

• Promotes a sense of safety (physical and psychological)

• Welcoming

• Calm

• Supports self care

• Gender activities or space
Environment

Sounds

SIGNAGE

LIGHTING

Hallways

Bathrooms

SECURITY
Staff Well-Being

- One of the top priorities
- Biggest investment
- Impact on turnover
- Impact on Performance
Supporting Staff

• How do you address secondary trauma in staff?

• What role do staff have in setting policy?

• What training do you offer staff?

• How do you handle staff departures?

Trauma Informed Human Resources [http://dmh.mo.gov/trauma/](http://dmh.mo.gov/trauma/)
MO Dept. of Mental Health  https://dmh.mo.gov/trauma/

Boy Who Was Raised As a Dog, Bruce Perry, MD

Centers for Disease Control  
https://www.cdc.gov/violenceprevention/acestudy/index.html

National Child Traumatic Stress Network  https://www.nctsn.org/

International Society of Traumatic Stress Studies  

Patsy Carter 
Patsy.carter@dmh.mo.gov